

**REMARKS**

Claims 43, 55, 65, and 70 have been amended and claim 78 has been added.

**Rejections Under 35 U.S.C. § 112**

Claims 70-77 stand rejected as indefinite. Claim 70 has been amended to reflect the proper antecedent basis of the slurry composition. Applicants respectfully request that this rejection be withdrawn.

**Rejections Under 35 U.S.C. § 103**

Claims 43-49, 52-62, and 65-77 stand rejected under 35 U.S.C. 103(a) as unpatentable over Greskovich in view of Banerjee et al and further in view of Motoya. Applicants respectfully disagree.

Greskovich is directed to a method for making investment casting molds for casting of superalloys. In particular, a wax pattern of an object is immersed in a slurry. The slurry coated wax pattern is withdrawn from the slurry material and drained. The wet surface of the slurry coated pattern is then sprinkled with a fused alumina stucco aggregate in a fluidized bed and air dried. This process is repeated six more times to produce a mold of seven successive layers with a stucco layer in between mutually adjacent coatings. (col. 3, lines 33-45).

Montoya is directed to a method of preparing a stucco composition. In particular, it relates to stucco compositions that are applied to various external surfaces. The stucco composition includes hydraulic cement, plaster sand, water, a retarder and a viscosifier. (col. 5, lines 12-14).

As an initial matter, Montoya is not analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be

reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). Contrary to the statement by the Examiner that Montoya teaches the use of welan gum in a slurry for obtaining a single coat in an investment mold, the invention of Montoya is not directed to an investment mold at all. Montoya is directed to stucco compositions that are applied to various external surfaces (col. 1, lines 15-17). For example, Montoya describes delivering the stucco mix by truck to a job site and then applying it to walls. (col. 9, line 66 to col. 10, line 42; col. 11, lines 10-11). Montoya does not mention any sort of casting or molding process. Thus, Montoya is neither in the field of investment casting, nor is it reasonably pertinent to creating investment casting shells more quickly, efficiently, cheaply, or of higher quality. Therefore, Montoya is not analogous art, and claims 43-49, 52-62, and 65-77 are not obvious. Applicants respectfully request that the rejections be withdrawn.

Obviousness requires some suggestion or motivation to combine the references. Even if Montoya were to be considered analogous art, there is no suggestion or motivation to combine Montoya with Greskovich. As previously described, the invention of Montoya is not directed to an investment mold at all. Montoya is directed to stucco compositions that are applied to various external surfaces, such as walls. Montoya does not mention any sort of casting or molding process. Additionally, the materials used in Greskovich and Montoya are completely different. Montoya teaches a stucco containing hydraulic cement and plaster sand. Greskovich teaches a slurry containing alumina and colloidal silica. There would be no motivation to add a material used with hydraulic cement and plaster sand, to a material using alumina and colloidal silica. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Because Greskovich and Montoya teach completely different methods and completely different materials, there would be no motivation to

combine the two. Because one skilled in the art would not be motivated to combine Montoya with Greskovich, claims 43-49, 52-62, and 65-77 are not obvious. Applicants respectfully request that the rejections be withdrawn.

Furthermore, method claims 55-77 are not obvious for the additional reason that the claimed invention eliminates a step from the prior art while retaining the function of that step. Omission of an element or step with the retention of an element or step's function is an indicia of unobviousness. (MPEP 2144.04). The investment casting method of Greskovich requires multiple steps, wherein in each step the wax pattern is coated with a slurry and then sprinkled with a fused alumina stucco aggregate. (col. 3, lines 37-39). The present invention uses a slurry that can be applied in as few as one or two coatings (paragraph 7, lines 1-3; Example 1), and does not require the use of an aggregate in addition to the slurry coating. Therefore, the present invention eliminates the step of applying an aggregate after applying the slurry coating, while retaining the function of creating an acceptable investment casting mold. Therefore, claims 55-77 are not obvious. Applicants respectfully request that the rejections be withdrawn.

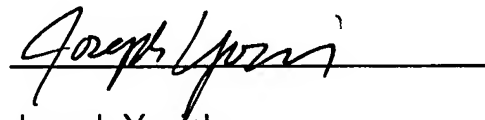
Claims 50 and 63 stand rejected under 35 U.S.C. 103(a) as unpatentable over Greskovich in view of Banerjee et al and further in view of Motoya. For the same reasons described above for claims 43-49, 52-62, and 65-77, there is no suggestion or motivation to combine Montoya with Greskovich. Therefore, claims 50 and 63 are not obvious. Applicants respectfully request that the rejections be withdrawn.

Claims 51 and 64 stand rejected under 35 U.S.C. 103(a) as unpatentable over Greskovich in view of Banerjee et al and further in view of Motoya and Doles. For the same reasons described above for claims 43-49, 52-62, and 65-77, there is no suggestion or motivation to combine Montoya with Greskovich. Therefore, claims 51 and 64 are not obvious. Applicants respectfully request that the rejections be withdrawn.

**SUMMARY**

Applicants believe the present application is now in condition for allowance. If the Examiner has any remaining issues, he is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Joseph Yosick", is written over a solid horizontal line.

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